

FORMATION OF SELF-ASSEMBLED MONOLAYERS ON SILICON SUBSTRATES

ABSTRACT OF THE DISCLOSURE

[0180] This invention provides a new method of forming a self-assembling
5 monolayer (SAM) of alcohol-terminated or thiol-terminated organic molecules (*e.g.*
ferrocenes, porphyrins, *etc.*) on a silicon or other group IV element surface. The assembly
is based on the formation of an E-O- or an E-S- bond where E is the group IV element (*e.g.*
Si, Ge, *etc.*). The procedure has been successfully used on both P- and n-type group IV
element surfaces. The assemblies are stable under ambient conditions and can be exposed
10 to repeated electrochemical cycling.

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